ADMINISTRATION REPORT ON THE MYSORE STATE RAILWAY FOR 1884—85, BY THE CONSULTING ENGINEER TO THE GOVERNMENT OF MYSORE.

Out of the total length of 5,974¼ miles of Metre Gauge Railway sanctioned in India, 4,300 miles were open to traffic on 31st March 1885 leaving 1,674¼ miles to be completed (Table A). Of 174 miles sanctioned for Mysore, 140 miles between Mysore and Gubbi were open to traffic; 33 miles from Gubbi to Tiptur await the provision of funds. The fort siding was pulled up in October 1884 as it did not pay its working expenses.

Lines under construction.—The expenditure on Mysore-Gubbi Section 140 miles to end of 1884 is as under :—

Heads.	Bangalore-Mysore, miles 86.	Bangalore-Tumkur, miles 43.	Tumkur-Gubbi, miles 11.	Mysore-Gubbi, miles 140.	Cost per mile.	Percentage on total.
I. Preliminary Expenses	94,841	24,483	5,373	1,24,697	892	1·99
II. Land	53,291	4,385	...	57,676	413	0·92
III. Construction of Line	10,37,761	4,94,647	94,076	16,26,484	11,636	25·96
IV. Ballast and Permanent Way	15,02,574	6,84,103	1,31,112	23,17,789	16,585	37·00
V. Stations and Buildings	4,03,861	91,252	13,026	5,08,139	3,636	8·11
VI. Plant	84,450	47,890	1,336	1,33,676	957	2·14
VII. Rolling stock	6,67,868	75,058	...	7,42,926	5,216	11·86
IX. Establishment	3,56,995	80,872	4,485	4,42,352	3,165	7·06
X. Suspense	1,78,369	1,40,989	897	3,20,255	2,292	5·11
Total ...	43,80,010	16,43,679	2,50,305	62,73,994	44,894	100·15
Deduct receipts on capital accounts ...	8,624	750	...	9,374	67	0·15
Grand Total ...	43,71,386	16,42,929	2,50,305	62,64,620	44,827	100

which gives a charge for establishment of 7·06 per cent of the total outlay.

The approximate cost of open line at the end of March 1886 after meeting the cost of new engines and rolling stock will be Rs. 65,47,000 at a rate of Rs. 46,764 per mile.

Lines surveyed.—The present terminus is at Gubbi on the N. W. extension. The surveys, plans and estimates for the extension to Tiptur (33 miles) received the approval of the Government of India in January 1884, but construction was deferred for want of funds. The amount including suspense is Rs. 13,71,003 at a rate of Rs. 41,786 per mile.

The surveys, plans and estimates for the extension beyond Tiptur to Harihar on the Mysore frontier 124½ miles was forwarded to the Resident on 13th July 1885 for submission to Government of India. The total estimate for this 124½ miles amounts to Rs. 49,29,939 or Rs. 39,607 per mile.

Surveys, plans and estimates for an extension from Mysore to Nanjangud 14¼ miles are ready. The total estimate amounts to Rs. 6,52,661 at a rate of Rs. 45,481 per mile. If however the existing bridge over the Kabani river is used for the railway, the rate per mile is reduced to Rs. 38,378.

Lines open to traffic.—During the year 1884—85, 54 miles of line were added to the open line, *viz.*,

Bangalore to Tumkur 43 miles on 11th August
Tumkur to Gubbi 11 miles { on 1st October (for goods).
on 26th December (for coaching).

The following figures showing comparative cost of certain metre gauge railways are extracted from a Table given on page 60 of Director General of Railways' Administration Report for 1884—85:—

Statement showing total cost of each Metre Gauge Railway on 31st December 1884 and the Average cost per mile.

Railway.	Length of line open on 31st December 1884	Total Capital outlay to 31st December 1884 (exclusive of steam boat service and suspense.)	Average cost per mile open (exclusive of steam boat service and suspense.)	Total Capital outlay to 31st December 1884
1. South Indian	654·00	4,33,04,071	66,214	4,54,96,187
2. Rajputana-Malwa	1,120·14	9,31,22,686	83,135	9,77,28,200
3. Northern Bengal	249·25	2,02,45,796	81,227	2,13,61,316
4. Tirhoot	226·00	1,36,64,645	60,463	1,48,64,982
5. Cawnpore-Achnera	239·78	99,55,255	41,518	1,05,10,736
6. Nagpur Chhattisgarh... ...	149·00	99,06,981	66,490	1,01,55,843
7. Burma	254·00	1,96,32,103	77,292	2,08,61,290
8. Bhavanagar-Gondal	193·21	90,19,283	46,681	92,92,039
Total.....	3,085·38	21,88,50,820	5,23,020	23,02,70,593
Average cost of one mile open Nos. 1 to 8	...	...	70,932	74,633
9. Mysore	139·75	59,44,364	...	62,64,620
Average cost of one mile open, Mysore ...	...	...	42,536	44,827

which gives a result in favor of Mysore of Rupees 28,396 per mile open if suspense is excluded and of Rs. 29,806 per mile open if suspense is included.

For further comparison Table B has been prepared from the classified expenditure including suspense appropriated on these lines up to 31st December, 1884. The South Indian Railway (Rs. 66,214 per mile) has been omitted for want of detail and Burma is not entered as capital outlay given includes construction of line not open.

Table C has been prepared from Table B and shows under every head the outlay per mile on 7 Metre Gauge Railways including Mysore. The figures for Mysore differ from those of the previous year owing to the addition of 54 miles to its length.

Table D gives in detail the number of Engines and vehicles used in carrying traffic.

The rolling stock compared with the average of other Metre Gauge Railways is as under :—

Class of Stock.	Average of 8 Railways.		Mysore.	
	1883.	1884.	1883.	1884.
Engines	18	31	15	15
1st Class Carriages	5·5	8	15	14
2nd Class „	4·9	7	6	6
3rd or Intermediate	4·6	5	...	...
4th or Lowest	34·4	58	53	71
Composite	3·5	6	...	1
Miscellaneous coaching	7·8	12	6	8
Goods vehicles	322·3	546	158	218
Brakes	14	11	7	9

To this list should be added 6 N class Engines which arrived in Madras August 1885, 38 covered goods and 5 highsided wagons constructed before June 1885, and two 3rd Class carriages, one carriage truck, and 2 Powder vans under construction. Nineteen Lowsided wagons also ordered.

REVENUE.

The general results of working are given in table E and the following items are eliminated therefrom :—

Progressive Number.	Items.		Average on 8 Railways.	Mysore.
1	Miles open		139·75	139·75
1a	Mean mileage worked during the year		104·84	104·84
4	Coaching receipts	Rs.	3,37,917	2,26,275
5	Goods receipts	„	5,21,064	1,28,751
6	Gross earnings	„	8,84,977	3,61,448
8	Percentage of working expenses to gross receipts ...		60·70	54·23
10	Do Interest on Capital		4·27	2·64
14	Total train miles run		304,130	109,607
17	Gross earnings per train mile ...	Rs.	2·91	3·30
18	Working expenses per train mile ...	„	1·77	1·79
19	Net earnings per train mile	„	1·14	1·51
20	Number of passengers in a passenger train ...		211·30	248·16
21	Number of tons in a goods train		56·50	44·94
22	Vehicles in passenger train		12·99	12·43
23	Do in goods trains		23·67	7·41
27	Cost of hauling a passenger one mile ...	Pies.	1·42	1·40
28	Do, one ton of goods		6·68	9·04
29	Sum received for carrying a passenger one mile ...		2·41	3·11
30	Do one ton of goods		9·38	9·59

which roughly indicate that Mysore had ⅓ less coaching and ¼ less goods than the average.

Passenger Traffic.—(Table F)—The number of passengers carried was 376,014 for Rs. 2,26,275 against 362,245 for Rs. 2,07,486 during 1883. The increase being 3·8 per cent in number and 9 per cent in money. The increased mileage open was however 20 per cent and to have preserved the rate of the previous year there should have been 575 more passengers carried and 225 more rupees earned per mile.

The percentages were :—

Classes.	Number.		Rupees.	
	1883.	1884.	1883.	1884.
1st Class	0·64	0·30	3·41	3·58
2nd Class	2·70	3·36	4·43	3·55
3rd Class	96·66	95·84	84·58	83·92
Miscellaneous	...	...	7·53	8·95

Passenger fares in Mysore remain as heretofore (vide table F).

The distribution of Mysore coaching traffic in numbers and rupees compared with the average of 8 other lines is as under :—

Coaching.	Average of 8 for 104·84 miles.		Mysore 104·84 miles.	
	Number.	Rupees.	Number.	Rupees.
1st Class	1,695	9,384	3,015	8,093
2nd Class	6,987	10,950	12,621	12,119
3rd or intermediate	4,434	5,117	...	...
4th or lowest	618,896	2,83,456	360,378	1,89,900
Miscellaneous	...	29,011	...	16,163
Totals...	632,012	3,37,918	376,014	2,26,275

or 41 per cent less in numbers and 33 per cent less in money than the average.

Goods Traffic.—(Table G.)—During the year 1884, the number of tons carried was 41,118 for Rs. 1,28,751, being an increase of 47 per cent in weight and 43 per cent in money on the totals for the previous year, while the mileage worked was only 20 per cent in excess. The percentages were :—

	Tons.		Rupees.	
	1883.	1884.	1883.	1884.
General merchandise	71·06	87·36	72·67	77·80
Military stores	0·12	...	0·29	0·03
Railway material	14·37	4·40	18·97	16·26
Coal for revenue	5·87	...	1·04	...
Revenue stores	8·50	8·20	5·13	4·61
Live stock	0·08	0·04	0·52	0·15
Miscellaneous	...	...	1·38	1·15

The rates for merchandise remain the same (*vide* Table H).

The quantities of principal articles carried and their receipts are given in Table J. The most important are :—

Articles.	1883.		1884.	
	Tons.	Rupees.	Tons.	Rupees.
46. Railway material	4,017	17,097	1,808	20,933
29. Seeds	2,820	7,919	3,864	9,805
14. Grain and pulse	3,000	7,797	7,468	16,207
36. Wood	3,324	6,589	3,454	2,972
27. Salt	2,139	6,335	2,036	5,221
47. Revenue stores	4,018	5,557	3,374	5,940
8. Cotton manufactured	752	4,857	1,106	6,931
13. Fruits and nuts	962	4,496	1,602	6,771
40. Coffee	454	2,421	643	2,713

The distribution of Mysore Goods Traffic in tons and rupees compared with the average of other lines is as under :—

Goods.	Average of 8 Lines, 104·84 Miles.		Mysore, 104·84 miles.	
	Tons.	Rs.	Tons.	Rs.
General merchandise	72,443	4,63,733	35,919	1,00,170
Military stores	146	1,619	2	31
Railway material for construction	11,392	27,201	1,808	20,933
Coal for public and construction	1,179	3,694	...	...
Coal for revenue	3,611	11,138	...	...
Revenue stores other than coal	16,613	10,990	3,373	5,938
Live stock	41	639	16	196
Miscellaneous	...	2,054	...	1,483
Total.....	105,425	5,21,065	41,118	1,28,751

or 61 per cent less in tons and 76 per cent less in money than the average.

The unit mileages of Passengers and of Goods are given in Table K.

Total Receipts and Expenses.—(Table L.)

The gross receipts were	..	Rs. 3,61,448 or Rs. 3·30	per train mile.
The working expenses	..	„ 1,95,969 or „ 1·79	„
The net profits were	..	„ 1,65,479 or „ 1·51	„

The working expenses were 54·22 per cent of the gross receipts, leaving 45·78 per cent as profits and giving a return of 2·64 per cent on the capital of the Railway, against 2·31 per cent for 1883.

The total traffic was in the following proportion:—

Coaching	62·60 per cent.
Goods	35·62 „
Miscellaneous	1·78 „

The result of the years working as compared with the Average on other Lines is :—

Receipts.	Average of 8 other lines, 104·84 miles.		Mysore, 104·84 miles.	
	Rs.	Per Train mile.	Rs.	Per Train mile.
Coaching	3,37,918	2·71	2,26,275	4·33
Goods	5,21,064	2·90	1,28,751	2·24
Miscellaneous	25,996	0·09	6,422	0·06
Gross receipts	8,84,978	2·91	3,61,448	3·30
Working expenses	5,37,169	1·77	1,95,969	1·79
Net Profits	3,47,809	1·14	1,65,479	1·51
Number of Train miles	304,130		109,609	

Mysore has apparently done 36 per cent of the work and earned 47 per cent of the money on the average of other lines.

Working Expenses.—(Table M.)

The expenditure under different heads, as compared with that of 1883 is in the following proportion :—

Heads.	Of total expenditure per cent.		Of gross receipts per cent.	
	1883.	1884.	1883.	1884.
Maintenance	28·35	25·41	19·02	13·78
Locomotive	28·45	35·27	19·08	19·12
Carriage and Wagon	7·32	6·96	4·91	3·77
Traffic	16·03	12·70	10·76	6·89
General	18·78	17·68	12·60	9·59
Special and Miscellaneous	1·07	1·98	0·72	1·07
	100	100	67·09	54·22

The details of expenditure on Mysore Line as compared with the average on eight other lines are as under :—

Expenditure.	Average of 8 Lines 104·84 Miles.				Mysore 104·84 Miles.			
	Amount.		Per train mile.		Amount.		Per train mile.	
	1883.	1884.	1883.	1884.	1883.	1884.	1883.	1884.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Maintenance ...	91,631	1,39,902	0·36	0·46	57,617	49,795	0·65	0·45
Locomotive ...	1,54,588	1,94,080	0·61	0·64	57,805	69,110	0·66	0·63
Carriage and Wagon.	33,162	41,677	0·13	0·14	14,884	13,638	0·17	0·12
Traffic ...	64,632	81,679	0·25	0·27	32,575	24,897	0·37	0·23
General ...	49,111	63,363	0·19	0·21	38,154	34,651	0·43	0·32
Steam boat ...	6,706	9,286	0·03	0·03	...	...	...	...
Special and Miscellaneous ...	8,126	7,182	0·03	0·02	2,185	3,878	0·03	0·04
Total.....	4,07,956	5,37,169	1·60	1·77	2,03,220	1,95,969	2·31	1·79
Number of Train Miles ...	255,001	304,130	...	...	88,122	109,607	...	...

That is to say that although Mysore had only 36 per cent of the average work to do, its cost of working is scarcely more per train mile than for the larger amount.

A few remarks are now offered with regard to the working expenditure under the different heads.

Maintenance.—The average cost of maintaining one mile of line per month on other lines is Rs. 111 and in Mysore it is not more than Rs. 60 (including capital maintenance as revenue expenditure.) It will not be necessary to increase this sum to any great extent to meet an increase of traffic. The mileage cost per month on Tirhoot was 97, on Cawnpore-Achnera 54 and on Bhaynagar-Gondal 59.

Locomotive.—The total expenditure per train-mile is the same as the average on other lines, but compared with 1883 the gross ton miles in Mysore have increased 31 per cent and the locomotive expenditure has increased by 19 per cent.

The detail of expenditure for 1884 is :—

	Rs.	Per cent of Total.
1. General Superintendence ..	6,085	8·80
2. Running Expenses ..	16,342	23·65
3. Fuel	21,442	31·03
4. Water.	1,707	2·47
5. Oil	3,049	4·41
6. Maintenance and Renewal ..	9,468	13·70
7. Unclassified Expenditure ..	11,017	15·94
	69,110	100

The total quantity of fuel consumed in 1884 was 5,327 tons at a cost of Rs. 21,443. Wood fuel is procured from the Forest Department at Rs. 4 per ton and a small quantity (82 tons) of coal was obtained from Madras. The average consumption was 90·93 lbs per engine mile. The price of fuel is to be increased to include seigniorage, collection and carriage. The consumption per train mile in 1882 was 89·82 lbs; in 1883 it was 102·61 lbs and in 1884 it was 108·86 lbs. The comparatively low consumption in 1882 was due chiefly to the fact that A class engines were in use, and the higher consumption in 1883 and 1884 is due to N class engines with full loads, at the same time the quality of fuel is said to have been inferior.

The following table is extracted from page 34 of Director General of Railways' Administration Report :—

Railway.	Source and Description of fuel used.	Per train mile.	
		Consumption in lbs.	Cost in Annas.
1. South-Indian	English and Australian coal...	27·04	3·16
2. Rajputana-Malwa	English and Bengal coal and wood	33·25	5·10
3. Northern Bengal	Bengal coal	30·95	2·07
4. Tirhoot	Do	31·81	2·23
5. Cawnpore-Achnera	Do	32·52	3·74
6. Nagpur-Chhattisgarh	Warora coal	61·70	3·73
7. Burma	English coal, patent fuel and wood	20·18	2·70
8. Bhavnagar-Gondal	English coal	23·10	3·50
9. Mysore	Wood	108·86	3·13

The consumption of fuel on lines burning wood is as under.

Madras	91·69
Indus valley	100·67
Nizam's	76·67
	3)269·03

average 89·68 lbs. per train-mile, while Mysore has consumed 108·86 lbs.—

Carriage and Wagon Expenses.—The total expenditure is Rs. 13,638 or 0·12 per train mile against Rs. 14,884 or 0·17 per train mile of 1883. The details of expenditure compared with those of 1883 are given below:—

	1883.	1884
General superintendence...	7,376	6,084
Repairs and renewals, &c....	4,497	5,237
Cleaning carriages	3,011	2,317
	14,884	13,638

a reduction of 8 per cent on outlay of the previous year.

Traffic Expenses.—The total expenditure is Rs. 24,897 against Rs. 32,575 in 1883.

The train miles increased by 24 per cent, while the expenditure has been reduced by 33 per cent. The detail is as under:—

	1883.	1884.
Salaries and wages	23,262	23,508
Fuel, lighting, water, &c.	1,594	1,541
Clothing	570	728
Printing...	713	487
Miscellaneous expenses	284	298
Payments to other lines	6,104	—1,708
Unclassified expenditure	48	43
Total.....	32,575	24,897

General Remarks.—Compared with the average of other lines during the year 1884, Mysore carried 41 per cent less passengers and 61 per cent less goods. With this amount of short traffic it has managed to keep its working expenses at 54·22 per cent of its gross receipts and return a dividend for the year of 2·64 per cent on the capital outlay for 140 miles. But as the mean mileage worked during the year was only 104·84 miles the net return in reality is $(\frac{2\cdot64 \times 140}{104\cdot84})$ at a rate of $3\frac{1}{2}$ per cent.

At present the Mysore system consists of 2 branches; one 86 miles and the other 54 miles in length. Had it secured the average traffic, the net return would have been $(\frac{8,84,978 \times 45\cdot78}{62,64,620})$ nearly $6\frac{1}{2}$ per cent. In addition to the capital outlay Rs 62,64,620 there is a further charge of Rs. 4,65,986 for simple interest in excess of net revenue to the end of the official year 1884—85.

A. LEMESSURIER, *Colonel, R. E.,*
Consulting Engineer, Mysore Government.

BANGALORE,
1st Sept. 1885.